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REMARKS

Claims 1-42 are currently pending in the subject application and are presently under consideration. A version of all pending claims is found at pages 2-10. Claims 1 and 37 have been amended herein. Favorable reconsideration of the subject patent application is respectfully requested in view of the amendments and comments herein.

I. Rejection of Claims 1-4, 6, 10 and 21-22 Under 35 U.S.C. §102(b)

Claims 1-4, 5, 10 and 21-22 stand rejected under 35 U.S.C. §102(b) as being anticipated by Irvin (U.S. Patent No. 5,742,500). It is respectfully requested that this rejection be withdrawn for at least the following reason. Independent claim 1 has been amended herein to include the limitation, *automatically*. Irvin does not teach or suggest an automatic means of controlling the pump system, relying instead on human intermediaries, *e.g.*, motor staffers to activate, monitor, and deactivate the pumps. Thus, it is believed that claim 1 is in condition for allowance, and accordingly, that this rejection should be withdrawn with respect to independent claim 1 and associated dependent claims 2-4, 6, 10, 21-22.

II. Rejection of Claims 40-42 Under 35 U.S.C. §102(e)

Claims 40-42 stand rejected under 35 U.S.C. §102(e) as being anticipated by Hays *et al.* (U.S. Patent No. 6,260,004). It is respectfully requested that this rejection be withdrawn for at least the following reason. Hays *et al.* does not disclose, teach or suggest each and every limitation of the subject claims.

A single prior art reference anticipates a patent claim only if it expressly or inherently describes each and every limitation set forth in the patent claim. *Trintec Industries, Inc. v. Top-U.S.A. Corp.*, 295 F.3d 1292, 63 USPQ2d 1597 (Fed. Cir. 2002); *See Verdegual Bros. v. Union Oil Co. of California*, 814 F.2d 628, 631, 2 USPQ2d 1051, 1053 (Fed. Cir. 1987). The identical invention must be shown in as complete detail as is contained in the ... claim. *Richardson v. Suzuki Motor Co.*, 868 F.2d 1226, 9 USPQ2d 1913, 1920 (Fed. Cir. 1989).

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Independent claim 40 recites *a controller for providing a control signal*. In particular, the subject claimed invention utilizes the control signal generated by the controller to optimize performance of the system as a whole, based on a specified setpoint together with diagnostic information provided by the diagnostic component of the system. *See e.g.*, page 13, lines 6-10. Hays *et al.*, does not teach or suggest this functionality.

Hays *et al.*, teaches an apparatus and method for *diagnosing* rotating equipment commonly used in the factory and process control industry, but does not teach or suggest generating a *control signal* based on diagnostics to optimize system. It is readily apparent therefore, that Hays *et al.* does not disclose or suggest each and every feature of applicants' claimed invention, and that this rejection should be withdrawn with respect to independent claim 40, and claims 41-42 that depend therefrom.

III. Rejection of Claims 5, 7-9, 11-20 and 23-36 Under 35 U.S.C. §103(a)

Claims 5, 7-9, 11-20 and 23-36 stand rejected under 35 U.S.C. §103(a) as being unpatentable over Irvin (U.S. Patent No. 5,742,500) in view of Crane (U.S. Patent No. 4,584,654). It is respectfully requested that this rejection be withdrawn for at least the following reason. Neither Irvin nor Crane, alone or in combination, teach or suggest applicants' claimed invention.

To reject claims in an application under §103, an examiner must establish a *prima facie* case of obviousness. A *prima facie* case of obviousness is established by a showing of three basic criteria. First, there must be some suggestion or motivation, either in the references themselves or in the knowledge generally available to one of ordinary skill in the art, to modify the reference or to combine reference teachings. Second there must be a reasonable expectation of success. Finally, the prior art reference (or references when combined) *must teach or suggest all the claim limitations*. *See* MPEP §706.02(j). The *teaching or suggestion to make the claimed combination* and the reasonable expectation of success *must be found in the prior art and not based on the Applicant's disclosure*. *See In re Vaeck*, 947 F.2d 488, 20 USPQ2d 1438 (Fed. Cir. 1991). An examiner cannot establish

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obviousness by locating references which describe various aspects of a patent applicant's invention without also providing evidence of the motivating force which would impel one skilled in the art to do what the patent applicant has done. *Ex parte Levengod*, 28 USPQ2d 1300 (P.T.O.B.A.&I. 1993).

Independent claims 23, 34 and 35 recite similar claim elements: *a motor drive providing electrical power to the motor in a controlled fashion according to a control signal; and a controller providing the control signal to the motor drive according to a desired operating point within an allowable range of operation about a process setpoint.* In particular, applicants' claimed invention communicates the control signal *directly* to the motor drive and thereupon the motor drive provides electrical power in a controlled fashion to the motor; there is no human intermediary to facilitate actuation of the motors. Neither Irvin nor Crane discloses such a feature.

As Examiner concedes, Irvin does not disclose providing a control signal to a motor drive. Rather, Irvin teaches a control system that includes motor staffers, *e.g.*, human intermediaries, to start and stop the motors in response to operating conditions. *See* column 1, lines 30-32.

With respect to Crane, Crane relates to a *monitoring* system and method, rather than a method and system to *optimize* the efficiency of a pumping system. In particular, Crane does not disclose providing a control signal *directly* to a motor drive in order that the motor drive can supply power to the motor in a controlled fashion according to the control signal. Crane utilizes human intermediaries, *e.g.*, an operator to monitor the operation of all pumping stations from a centralized location. *See*, column 7, lines 45-46. Further, Crane does not utilize the information that may have been gathered to generate a control signal that is thereupon communicated directly to a motor drive in order that the motor drive can in turn supply power to the motor in a controlled fashion according to the generated control signal. Crane does not go beyond monitoring the pumping system, using human intermediaries to actuate the machinery in the pumping system in response to the monitoring facility. Thus, Crane does not disclose *a motor drive providing electrical power to the motor in a controlled fashion according to a control signal; and a*

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controller providing the control signal to the motor drive according to a desired operating point within an allowable range of operation about a process setpoint.

In view of at least the foregoing, since neither Irvin nor Crane, either alone or in combination, teach or suggest each and every claim element set forth in applicants' claimed invention, it is submitted that this rejection should be withdrawn with respect to independent claims 23, 34 and 35, as well as those claims that depend therefrom. Further, as stated *supra*, since it is believed that independent claim 1 is in condition for allowance, it is submitted that rejection of claims 5, 7-9 and 11-20, that depend from independent claim 1, should also be withdrawn.

IV. Rejection of Claims 37-39 Under 35 U.S.C. §103(a)

Claims 37-39 stand rejected under 35 U.S.C. §103(a) as being unpatentable over Irvin (U.S. Patent No. 5,742,500) in view of Hays *et al.* (U.S. Patent No. 6,260,004). It is respectfully requested that this rejection be withdrawn for at least the following reason. Neither Irvin nor Hays *et al.*, alone or in combination, teach or suggest applicants' claimed invention.

Independent claim 37 has been amended to recite *a pump control system for automatically operating a pump driven by a motor in a controlled fashion*. Irvin does not teach or suggest a system that automatically operates a motor in a controlled fashion. Rather Irvin discloses a system that utilizes human intermediaries, *e.g.*, motor staffers, to actuate the motor as directed by the system. *See*, column 1, lines 30-32. Further, Hays *et al.* fails to teach or suggest a system that automatically operates a motor in a controlled fashion. As stated *supra*, Hays *et al.*, teaches an apparatus and method for *diagnosing* rotating equipment commonly used in the factory and process control industry, but does not teach or suggest automatically operating a pump driven by a motor in a controlled fashion. Thus Hays *et al.*, does not make up for the deficiencies inherent in Irvin with respect to independent claim 37, consequently, independent claim 37 is not obvious over the combination of Irvin and Hays *et al.* Accordingly, withdrawal of this rejection with respect to independent claim 37 and its associated dependent claims is respectfully requested.

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CONCLUSION

The present application is believed to be in condition for allowance in view of the above amendments and comments. A prompt action to such end is earnestly solicited.

In the event any fees are due in connection with this document, the Commissioner is authorized to charge those fees to Deposit Account No. 50-1063.

Should the Examiner believe a telephone interview would be helpful to expedite favorable prosecution, the Examiner is invited to contact applicants' undersigned representative at the telephone number listed below.

Respectfully submitted,

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